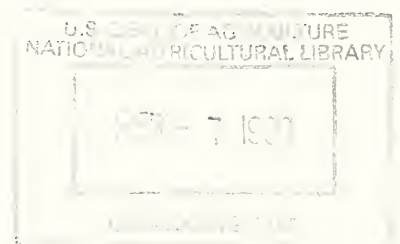United States
Department of
Agriculture

**Office of
Information
Resources
Management**

DM 3200-1

Application Systems
Life Cycle
Management Manual

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
(DM 3200-1)

Application Systems Life Cycle Management   TABLE OF CONTENTS

DEPARTMENTAL MANUAL	NUMBER: 3200-1

SUBJECT: APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT	DATE: March 3, 1988
	OPI: Agency Technical Services Division Office of Information Resources Management

1 PURPOSE

This manual describes the Department's management process for application systems life cycle management.

2 SPECIAL INSTRUCTIONS

Use this manual in conjunction with the following documents:

a   DM 3200-2, "A Project Manager's Guide to Application Systems Life Cycle Management," is a detailed, technical guide for managers of major software acquisition projects. The purpose of this guideline is to assist project managers who may require more detail than DM 3200-1 provides.

b   DR 3220-3, Software Management, establishes policy, responsibilities, and procedures for managing software within USDA.

3 ACKNOWLEDGMENT

This manual is an adaptation of a methodology developed by the Department of Interior.

MAJOR APPLICATION SYSTEMS
LIFE CYCLE MANAGEMENT
CHAPTER 1

THE APPLICATION SYSTEM LIFE CYCLE

INITIATION PHASE		DEVELOPMENT PHASE				OPERATION PHASE	
Mission Analysis Stage	Concept Development Stage	System Analysis Stage	System Design Stage	System Construction and Acquisition	User Acceptance Stage	Implementation Stage	Maintenance Stage

PROJECT MANAGEMENT, REPORTING AND CONTROL

Milestone 0	Milestone 1	Milestone 2	Milestone 3	Milestone 4

PROJECT REPORTING DOCUMENTS

MNS	SDP 1	SDP 2	SDP 3	SDP 4

MANAGEMENT DECISIONS REQUIRED

CONCEPT DEVELOPMENT DECISION	SYSTEM DESIGN DECISION	SYSTEM CONSTRUCTION DECISION	SYSTEM IMPLEMENTATION DECISION	SYSTEM REVISION NEEDED ?
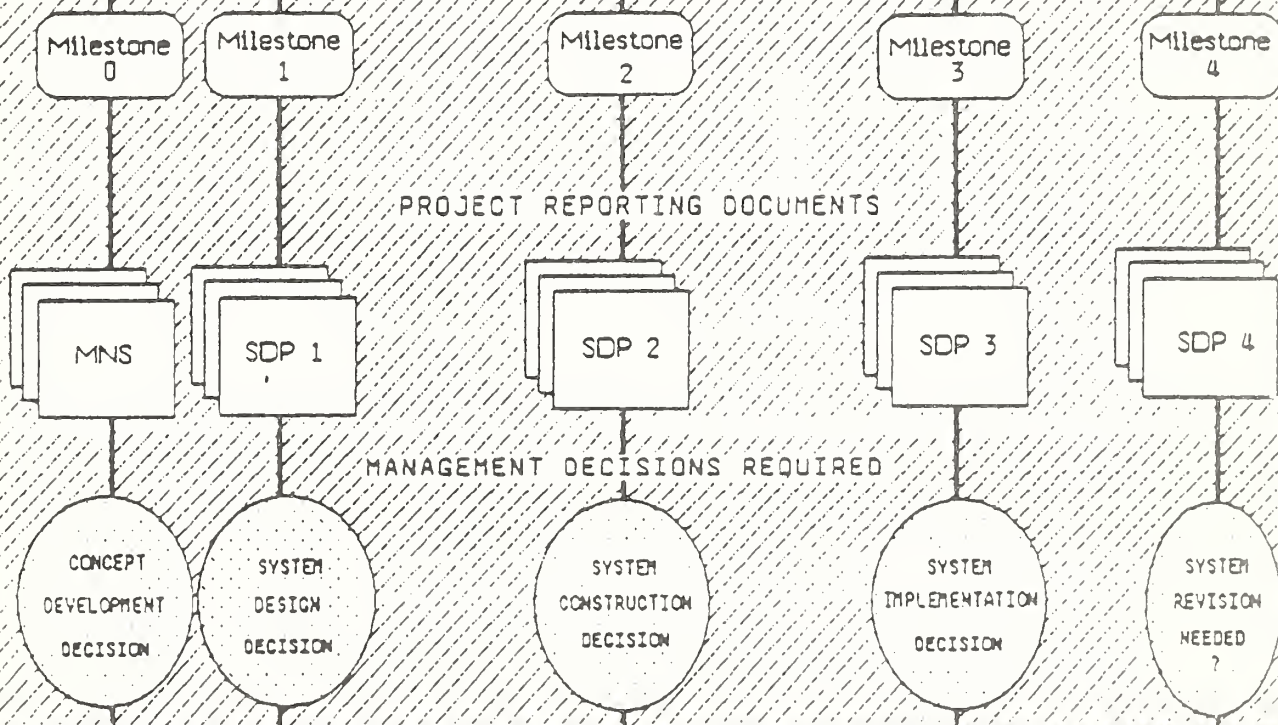
MNS = Mission Need Statement

SDP = System Decision Paper

3

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
(DM 3200-1)

Chapter 1   Application Systems Life Cycle Management   1.1

1.1 Purpose. This Application Systems Life Cycle Management Manual
describes the Department's management process for the design, development,
implementation, and operation of major application systems. This includes
new development, conversions, redesign or major enhancements of systems.

1.2 Application Systems Life Cycle Management.

        A. Definition. Application Systems Life Cycle Management is the
process of administering an application system over its entire life
cycle. The life cycle itself is the time span between establishing a need
for a system and the end of its operational use. The life cycle is
divided into discrete, or separate, phases with formal milestones used as
points for management control.

        B. Manual Structure. This manual has three chapters.

            (1) Chapter 1 provides an overview of Application Systems Life
Cycle Management, and includes definitions and management
responsibilities.

            (2) Chapter 2 contains a description of the life cycle of major
application systems, and the activities of each stage of the life cycle.

            (3) Chapter 3 describes Standards for Project Management and
Reporting and Control.

1.3 Objectives. This manual has six objectives.

        A. Establish a framework for managing the life of major application
systems.

        B. Establish control mechanisms to effectively develop, acquire,
evaluate, operate, and maintain application systems at the lowest total
overall costs.

        C. Ensure that an application system is responsive to user needs by
requiring user participation and approval of all phases of the life cycle.

        D. Identify individual roles and responsibilities throughout the
life cycle. Management is accountable for the success or failure of
application system actions.

        E. Identify all resource requirements related to an application
system for its entire life cycle.

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
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Chapter 1   Application Systems Life Cycle Management   1.4

    F. Avoid developing unneeded systems by completing mission analysis
before authorizing major application system development projects.

1.4 Applicability. The standards in this manual apply to major
application systems in the Department of Agriculture. This includes
development, acquisition and major system enhancements. These standards
do not apply to applications already under development.

The methodology is a tool to achieve a standardized, structured approach
to the systems development process. Within the framework of the
methodology, fourth generation tools and techniques are appropriate.
Agencies may use automated project management tools, prototyping, computer
aided software engineering products and other development techniques.

Application of the methodology is flexible. Agencies should take a
common-sense approach in determining when to apply the methodology.
Clearly, any large-scale development effort requiring sizable expenditures
of personnel time and funds should use the methodology. Questions to ask
to help identify a major application system are as follows:

    A. Does the proposed system directly affect the Department's ability
to meet a critical Departmental, national or international mission?

    B. Will the total cost exceed agency's technical approval threshold
established in DR 3130-1? Include cost of defining mission needs, and
developing or acquiring the application software. Applicable costs
include direct and allocated costs for hardware, software, labor (in-house
or contract), and charges for computer processing time during initiation
and development. Operating costs, for example, new hardware or a new
data base management system, are part of system life cycle costs (see C)
and not development costs.

    C. Will total life cycle costs, including the cost of operating the
system exceed $10 million? Will the annual cost of operating and
maintaining the system exceed $1,000,000?

    D. Will the system affect national security?

    E. Will the system directly affect the security and safety of
substantial financial resources, people, or other valuable assets?

    F. Does the system support a major mission whose function is
multi-agency in its scope?

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Chapter 1   Application Systems Life Cycle Management   1.5

     G. Does the system directly affect the ability of the Department to
perform a mission designated by the President, Congress, Office of
Management and Budget, or the Secretary as being of particular importance?

     H. Is this a major modification to an existing system which meets
the criteria stated above?

If the answer to any of these questions is "yes", then use the
methodology.   The formality and extensiveness of applying the methodology
should depend on the agency's assessment.

1.5 Responsibility

     A. Office of Information Resources Management (OIRM). OIRM is
responsible for:

          (1) Promoting the life cycle management concept and requirements
of this Application Systems Life Cycle Management Manual, and encouraging
their application to major application system development projects.

          (2) Clearly defining major application system development
projects and their goals and priorities in the Department's Long-range IRM
Plan, as described in DR 3111-1.

     B. Heads of agencies. Heads of agencies are responsible for:

          (1) Ensuring that their staff apply life cycle management
process to major application system development projects within their
respective agencies.

          (2) Appointing qualified officials within user organizations to
be responsible for management and control of specific major application
system development projects.

          (3) Applying the life cycle management process to all
application.system development projects to the maximum extent practical.

     C. Program and Administrative Managers. Program and administrative
managers who request the development of application systems are
responsible for:

          (1) Ensuring that major information system projects they request
are in the Department's Long-range IRM Plan, as described in DR 3111-1.

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Chapter 1   Application Systems Life Cycle Management   1.5C(2)

(2) Applying the life cycle management concepts and requirements in this manual to major application system projects they request.

(3) Assessing the sensitivity of the proposed systems and defining the level of security required.

1.6. Documentation. Complete and accurate documentation of the application systems covered by this manual is essential. Historically, ADP professionals have considered requirements and computer program and data documentation to be by-products of the development process. Because this manual applies to major, critically important application systems, documentation of systems requirements, computer programs, and data are important deliverables of the development process. Do not implement major application systems without this documentation. Use the documentation for system maintenance, impact of change analysis, management review and control, system conversion, and audits.

THE APPLICATION SYSTEM LIFE CYCLE
CHAPTER 2
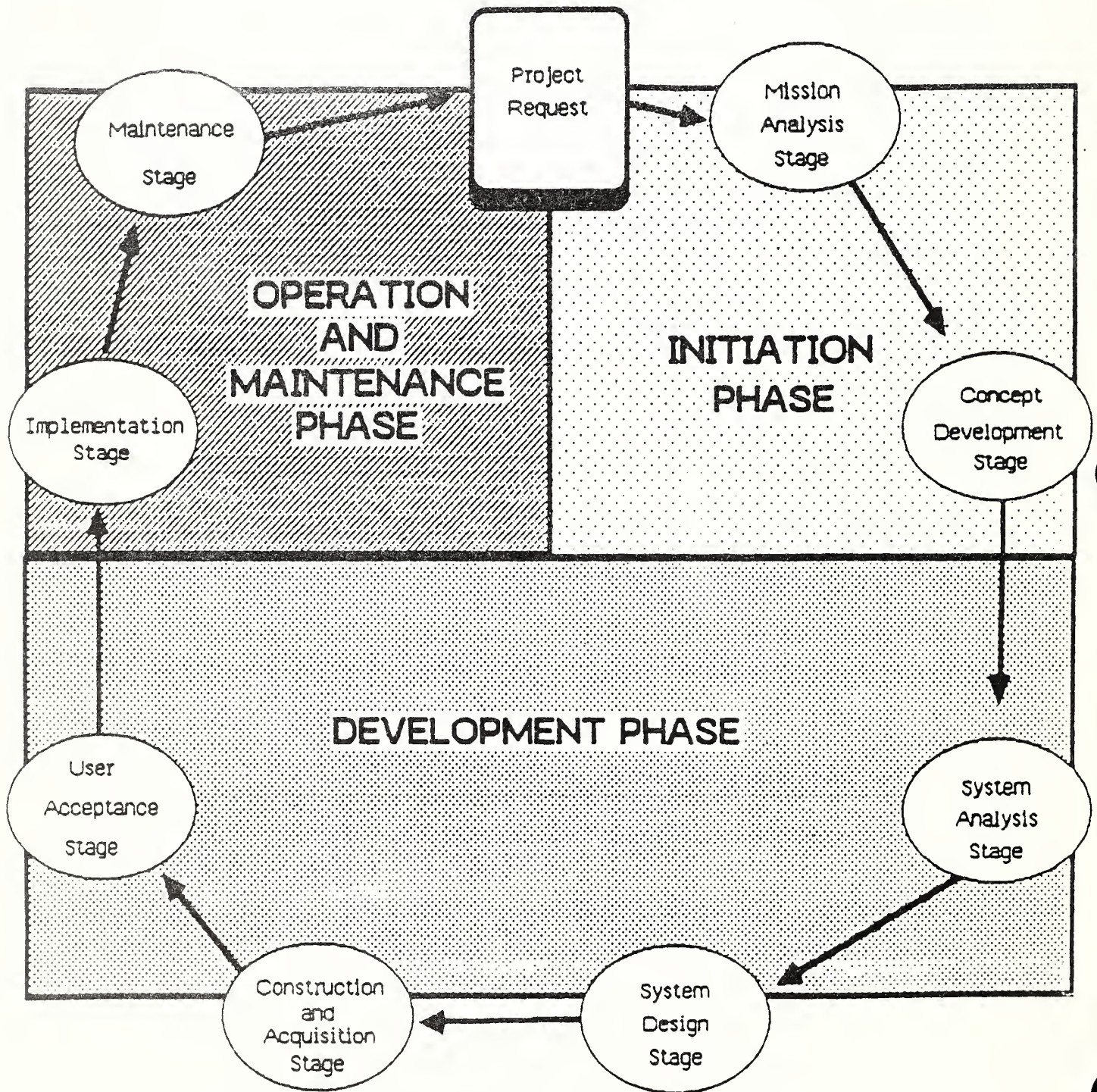
Project Request

Maintenance Stage

Mission Analysis Stage

OPERATION AND MAINTENANCE PHASE

INITIATION PHASE

Concept Development Stage

Implementation Stage

DEVELOPMENT PHASE

System Analysis Stage

User Acceptance Stage

Construction and Acquisition Stage

System Design Stage

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APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
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Chapter 2   The Application System Life Cycle   2.1

2.1. Purpose. The Application System Life Cycle (ASLC) identifies the
phases in the life of an application system (see Exhibit 2-1) and
describes work done in the phases.

2.2 Objectives.

   A. Establish a framework for managing the life of major applications
       systems.

   B. Provide guidelines for the activities during a system's life.

   C. Identify minimum applications systems documentation requirements.

   D. Establish products for monitoring progress during the life cycle.

   E. Define system development responsibilities.

2.3 Background.

   A. The Need for Standards. Most information systems managers admit
that system development projects often are not completed on time, do not
meet user requirements, and exceed the budget. Most failures are the
result of not following a consistent management approach for structuring
and controlling the process. The Application Systems Life Cycle
Management Manual is such a standard.

   B. ASLC Solution. The ASLC is a set of standards for initiating,
designing, installing, and maintaining applications systems. It provides
a common framework for managing the system development and maintenance
process. ASLC improves communication among diverse interest groups,
facilitates control of the process, and specifies the contents of
deliverables. The ASLC alerts management when a development project is in
jeopardy.

2.4 Responsibilities.

   A. Offices and agencies will manage all major application systems
during the Development Phase, and provide for maintenance in the Operation
Phase.

   B. Functional program and administrative management must oversee
major applications during the Initiation Phase, and retain management
oversight responsibilities during the Development and Operation Phase.

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Chapter 2   The Application System Life Cycle   2.5

    C. A Project Management Committee provides executive management
throughout a major application's life cycle.

    D. The Office of Information Resources Management issues standards
for major application systems management.

2.5 Project Request. The ASLC begins when someone identifies a
deficiency that inhibits USDA from meeting its mission. Anyone can
initiate an ASLC by notifying a responsible functional (programmatic or
administrative) manager, and the process of initiating a project begins
with the preparation of a project request.

2.6 ASLC Phases. There are three life cycle phases in the ASLC.

    A. Initiation Phase

        (1) Purpose. In this phase analyze the mission need to be sure
that a system is required. Provide clear direction for later phases and
future requirements. Construct a blueprint for the application.

        (2) Description. Develop an idea for a potential application
system. State mission tasks and identify deficiencies. Perform a
feasibility study to define the problem and alternative solutions. Obtain
enough data to decide whether to continue into the Development Phase.
Outline the application concept, and provide cost and benefit estimates.

Since justifying the need for a system is a management function,
management participation in the Initiation Phase should be high.
Automated tools are available to assist in determining the validity of the
project. (See Appendix C for a partial listing of available tools.)
Appropriate agency officials and OIRM must approve the project according
to DR 3130-1 stipulations.

        (3) Stages. There are two stages in this phase.

            o Mission Analysis
            o Concept Development

        (4) Initiation Phase Deliverables.

    The following information components are products of the Initiation
Phase. See DM 3200-2 for details on content. Please note that an
asterisk (*) indicates that the information must be present. Give enough

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
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Chapter 2   The Application System Life Cycle   2.6B

information to show logically a need for the project. For example, the
Project Request would state needs, impacts, cost, and a description of the
proposed system. Similarly, the feasibility study might contain mission
need statement, organization model, system objectives, preliminary benefit
cost analysis, and mission analysis strategy.

        *   o Project Request
             o Mission Analysis Methodology
        *   o Cost/Benefit Analysis (preliminary)
        *   o Project Charter
             o Organization Model
             o Mission Process Model
             o Information Model
        *   o Mission Need Statement
        *   o System Objectives
        *   o System Architecture
        *   o Data Architecture
        *   o Data Communications Architecture[1]
             o System Life Cycle Strategy
        *   o System Milestone Dates
             o System Life Cycle Resources Estimates
        *   o Revised Cost/Benefit Analysis
        *   o Revised Mission Need Statement
        *   o System Decision Paper 1

            [1] Refer to DR 3300 when preparing this document.

        (5) End of Phase Review. Project Management Committee reviews
System Decision Paper 1 to determine whether to approve the development of
the application system.

    B. Development Phase.

        (1) Purpose. This phase consists of constructing, testing, and
documenting the application system. Detailed requirements definition
occurs early in this phase.

        (2) Description. Define the functional requirements in enough
detail to determine system and software specifications. Then, identify
the data and security requirements (DM 3140 and FIPS PUB 73), establish
performance criteria to determine interfaces to other systems. Follow the
National Archives and Records Administration standards for records
creation, documentation, and disposal.

Working with in-house or contract staff, create a definitive design
proposal for development, or a prototype for experimentation. Also
prepare a detailed benefit cost analysis for the new design. During
system construction, acquire and install the hardware, data communications

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Chapter 2   The Application System Life Cycle   2.6B

and proprietary software. Develop application software, using structured
application development methods. Use computer aided software engineering
(CASE) packages whenever possible. The software undergoes unit and
technical testing before system acceptance testing takes place. Test and
approve security requirements.

Perform system (user acceptance) test to determine if the system's
functionality and data are acceptable to the user. Users of each type of
documentation will sign-off when the project team adequately prepares the
documentation. The project team corrects any deficiencies found in the
documentation. Complete user training material and prepare operation
instructions.

> (3) Stages. Development Phase has four stages.
>
> > o System Analysis (prototyping may be substituted)
> > o System Design
> > o Construction and Acquisition
> > o User Acceptance
>
> (4) Development Phase Deliverables.

Please note that an asterisk (*) indicates that the information must
be present as separate documents. Combine other items logically in one or
more documents. For example, the Implementation Plan could logically
contain the Conversion Plan, User Training Plan, and Post Implementation
Review Plan. The Design Proposal document could have the Detailed
Functional Requirements and Life Cycle Strategy as background material.

> > o Current System Description
> > o Detailed Functional Requirements
> > o Data Requirements
> > o Design Proposal
> > o Detailed Cost/Benefits Analysis (revised)
> > o Revised Life Cycle Strategy
> > o System Decision Paper 2
> > o ADPE Specifications
> > o Application Software Documentation
> > o System Test Plan
> > * o System Acceptance Report
> > o Implementation Plan
> > o Conversion Plan

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Chapter 2   The Application System Life Cycle   2.6C

           o User Training Plan
           o Post Implementation Review Plan
   * o Data Processing Manual
   * o User Manual
   * o Control, Backup and Security Summary
   * o Operations Manual
   * o System Decision Paper 3

(5)   End of Phase Review. Project Management Committee reviews progress of the project. It assesses the changes in project to decide whether the mission analysis/project initiation needs to be redone.

C. Operation and Maintenance Phase.

(1) Purpose. Implementation occurs in this phase. The system should fulfill the Detailed Functional Requirements.

(2) Description. Operate the system to accomplish the production objectives for which designed. Run, change, or repair the system as necessary. Prepare resource utilization and efficiency reports. Conduct periodic post implementation reviews to ensure that the system still meets user and security requirements.

(3) Stages. Operation and Maintenance Phase has two stages.

      o Implementation
      o Maintenance

(4) Operation and Maintenance Phase Deliverables.

      o Application Stewardship Document
      o Post Implementation Review Reports
      o System Decision Paper 4

2.7 Use of Standards. Use this Application Systems Life Cycle Management Manual when developing major applications systems. In addition to the Federal Information Processing Standards (FIPS PUB) Guidelines; numbers 38,64,73 and 106, and the USDA directives listed in DR 3220-3. ADP reviews may be conducted to ensure compliance.

2.8 Document Retention. The Project Manager retains all ASLC documentation in the Project File. Give a copy of these documents to the functional manager (steward) who is accountable for the application system. When discarding or replacing an application system, follow guidance in ASAR 3040-1.

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
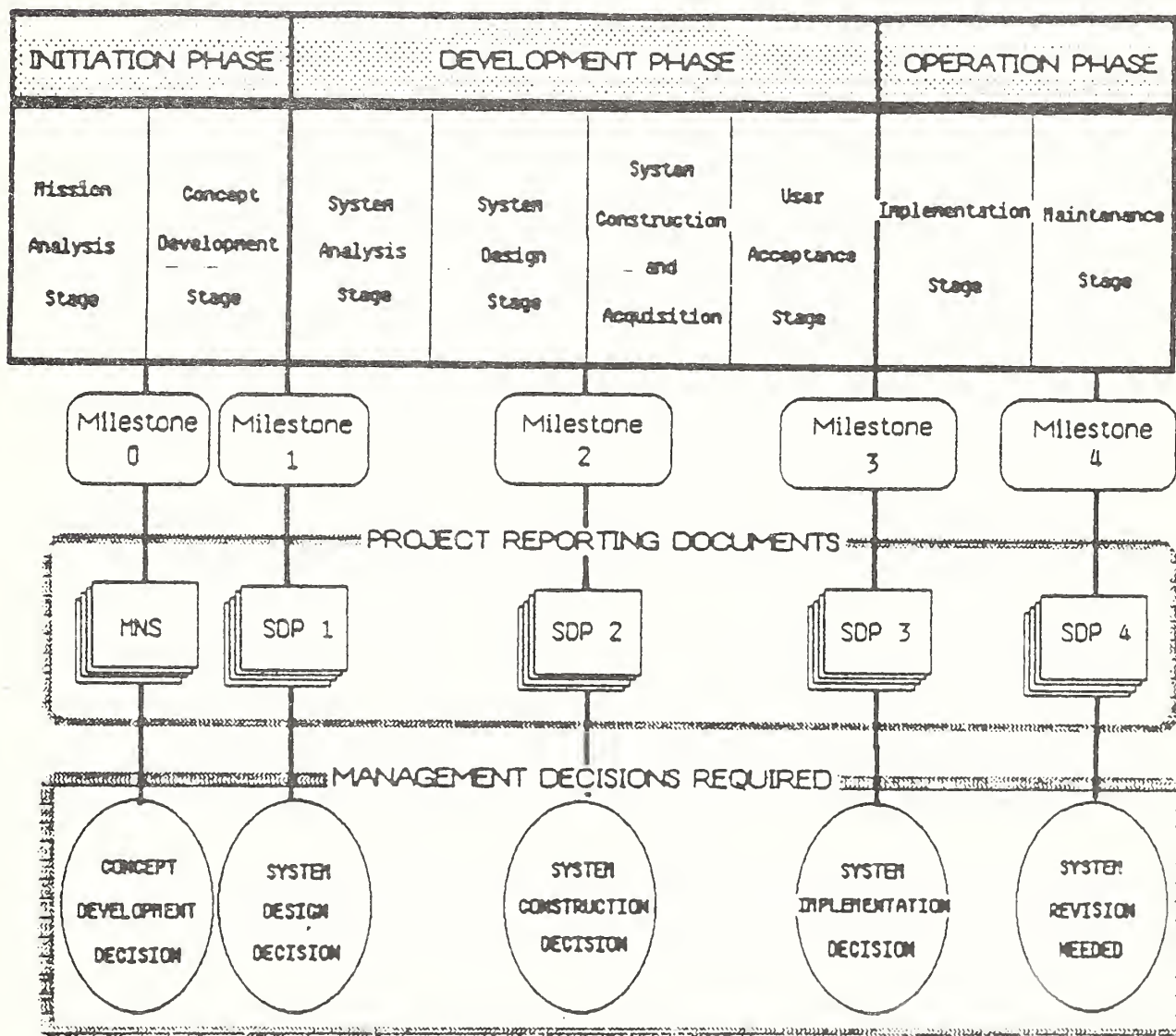(DM 3200-1)

Chapter 2   The Application System Life Cycle   2.8

Data in systems containing records created and maintained in electronic
and magnetic media will be retrievable, protected from unauthorized
disclosure, and disposed of only in compliance with approved records
disposal schedules. See 44 U.S.C., Chapter 33 or ASAR 3040-1.

PROJECT MANAGEMENT, REPORTING AND CONTROL
CHAPTER 3

INITIATION PHASE		DEVELOPMENT PHASE				OPERATION PHASE	
Mission Analysis Stage	Concept Development Stage	System Analysis Stage	System Design Stage	System Construction and Acquisition	User Acceptance Stage	Implementation Stage	Maintenance Stage

Milestone 0	Milestone 1		Milestone 2		Milestone 3	Milestone 4

PROJECT REPORTING DOCUMENTS

MNS	SDP 1		SDP 2		SDP 3	SDP 4

MANAGEMENT DECISIONS REQUIRED

CONCEPT DEVELOPMENT DECISION	SYSTEM DESIGN DECISION		SYSTEM CONSTRUCTION DECISION		SYSTEM IMPLEMENTATION DECISION	SYSTEM REVISION NEEDED

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT MANUAL
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Chapter 3.   Project Management, Reporting, and Control   3.1

3.1 Purpose. This chapter establishes minimum standards for project management and reporting when a major application system is being developed. These standards only apply to application systems that are deemed to be "major" under the guidelines of this manual.

3.2 Objectives.

A. Provide mechanism for standardization of major application systems development.

B. Coordinate project management with the Application System Life Cycle (Chapter 2); and

C. Ensure adequate management control and review mechanisms exist when developing major application systems. Developers will thoroughly document system costs and benefits for review by management.

3.3 Applicability. This standard applies to all functions which lead to the implementation of a major application system or modification to such systems, as defined in paragraph 1.3 of this manual.

3.4 Components. The three major components of project management, reporting and control are the organization and management of the project; placing management controls upon the project; and requiring reporting to enforce the management controls.

A. Project organization and management require forming project teams to perform the life cycle activities mentioned in Chapter 2 of this manual. Because of the size and importance of major applications, the process requires two distinct project teams in a major application system's life cycle.

(1) Application Planning Team. This team completes the activities listed as part of the Initiation Phase. Since the work in this phase focuses upon the functional area's work needs, team members will be from the functional area sponsoring the automation project.

(2) ADP Development Team. This team will build upon the work of the application planning team, and complete the activities that form the Development Phase. The Project Manager of this team should have experience in project management and a thorough understanding of life cycle management.

B. Management controls include this manual and the structures it mandates to provide management oversight of the application system throughout its life cycle. Developers of application systems should use automated project management software packages to provide these controls and reporting requirements.

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Chapter 3   Project Management, Reporting and Control   3.4C

There are two bodies that directly review and exercise management oversight of the application development and acquisition process.

      (1) Project Management Committee (PMC). The PMC will review the reports of the Project Manager at each milestone and make a go/no go decision with regard to the next stage of the life cycle. The PMC should require the Project Manager to report progress periodically between milestones.

      (2) Acquisition Review Team (ART). Composed of OIRM, Office of Operations representatives, and representatives of the agencies, this group reviews the progress of major application system projects. It is a part of the GSA "Go-For-12" Parallel Review requirements of DR 3130-1. The Project Manager is responsible for meeting ART reporting requirements.

    C. Make progress reports at predetermined milestones in the life cycle. Management's explicit approval is needed at each milestone before the project can proceed beyond that milestone. Rigorous enforcement of these reporting requirements by management will mitigate the chances of a major application system failure late in the system life cycle. This will allow correction of applications that are "off-track" before they become major problems. Make formal reports to the Project Management Committee at each of the following milestones.

Milestone 0. This milestone occurs after the activities of Mission Analysis Stage are complete, and before Concept Development Stage begins. If the project manager recommends proceeding to the next stage of the project, the Project Management Committee decides whether or not to authorize the Concept Development Stage.

Milestone 1. This milestone occurs after the activities of Concept Development Stage are complete, and before Development Phase begins. The project manager makes a recommendation on whether to proceed with the next phase of the project. Using the project manager's recommendation, the Project Management Committee decides whether to authorize development of the proposed system. The Acquisition Review Team reviews the recommendation before system development begins.

Milestone 2. This milestone occurs after the activities of System Design Stage are complete, and before System Construction and Acquisition Stage begins. If the project manager recommends proceeding to the next stage of the project, the Project Management Committee decides whether or not to authorize the acquisition and/or construction of the system design.

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Chapter 3   Project Management, Reporting and Control   3.4

Milestone 3. This milestone occurs after the activities of User
Acceptance Stage are complete, and before Implementation Stage begins. If
the project manager recommends implementation of the system, the Project
Management Committee decides whether or not to authorize the
implementation.

Milestone 4. This milestone occurs after the system is in operation. The
responsible functional manager recommends whether or not changes need to
be made to the application system now in operation. The functional
manager presents a report on how the operational system meets the goals
outlined in the Initiation Phase. If the reviewers recommend changes, the
Project Management Committee decides which revisions to implement.

APPENDIX A

GLOSSARY

ADPE. Automatic Data Processing Equipment.

ADP Information System. An organized combination of human resources, ADP equipment, software, and established methods and procedures designed to collect, process and/or communicate data or information to support management, administrative, or other organizational mission or program requirements.

ADP Information System Application. See application system.

Application System. An information system composed of one or more units of software supported by ADPE and automated work methods and procedures to collect, store, process and disseminate information to support specific agency missions.

Application System Life Cycle. The time span between establishing a need for a system and the end of its operational use. Overall, the system life cycle consists of a number of discrete phases with formal milestones placed between and during each phase.

AS. Application System.

ASLC. Application System Life Cycle.

Automated Data Processing Equipment. Equipment used to execute computer program instructions, provide input to those instructions, or carry output from them. Included would be computer processing devices, data storage devices, data terminals, data communications equipment, and printing devices.

Concept Development Stage. The second stage in the life cycle of a major application system. In this stage, develop blueprints (plans) for the functions, data, and data communications needed to fulfill the mission needs. These blueprints provide guidance and structure to the work done when the system enters the Development Phase.

Custodian. A person who guards, protects, operates and maintains an application system under a service level agreement with the steward of the application system. The custodian of an application system is the ADP manager with line responsibility for providing timely and cost effective computing resources and system maintenance services. People who perform maintenance programming are carrying out custodial functions.

Development Phase. The second phase in the life cycle of major information systems, and major application systems. Development Phase includes the specification of functional and data requirements, construction and acquisition of required software and hardware. This phase also includes testing for technical and user acceptability of the new system.

GLOSSARY

Implementation Stage. The first stage in the Operation Phase of a system.
During Implementation Stage the application system is turned over to the
system maintenance staff (custodians) by the ADP development team, and
operation begins.

Information Technology. Such technical resources as hardware and
software, telecommunications, micrographics, reprographics, office
information systems equipment, and other automation used to address
problems in information handling, use, processing, storage, and
management.

Initiation Phase. The first phase in the life cycle of a major
information system. The functional description of an application system
results in the mission needs statement. In this phase construct a
blueprint for the development or acquisition of software to meet the
mission need.

Interoperability. A state where two application programs can use common
communications media to exchange information easily and precisely without
apparent regard to configuration or equipment manufacturer.

Life Cycle Management. The process for administering an ADP Information
System from the identification of a need through its replacement or
termination. This process emphasizes strengthening early decisions which
shape its costs and utility.

Maintenance Stage. The second stage in the Operation and Maintenance
Phase of a system's life cycle. During this stage, the maintenance staff
(custodians) maintains the application's operational effectiveness. The
responsible functional area (stewards) forward requirements for system
modifications.

Major ADP Information System. An automated system that requires special,
continuing management attention because of its extreme importance to an
agency mission; its high development, operation or maintenance costs; or
its significant impact on administration of agency programs, finances,
property, or other resources.

Major Application System. An application system which, because of its
importance to the Department requires special, on-going management
attention. This importance is a result of the scope or importance of the
missions being supported, the impact of the system on the financial,
property or personnel resources of the Department, or the cost of the
system.

Mission Analysis Stage. The first stage in the life cycle of a major
application system. Mission Analysis Stage includes the description of
mission needs for information and information processing.

GLOSSARY

MNS. Pronounced "mens." The application planning team prepares the Mission Need Statement document during the Mission Analysis Stage. It contains information describing the need for additional information and information processing in the workplace.

Operation and Maintenance Phase. The third phase in the life cycle of major information systems, and major application systems. This phase begins with the implementation of the system and continues as the system is operated to support the mission needs outlined in the Initiation Phase.

Phase. A distinct interval in the life cycle of an ADP information system, characterized by the type of activity performed and the specific end products produced.

Project. A planned undertaking that includes a number of activities to solve problems and produce results for an organization.

Project Charter. A written understanding between the Project Manager and the Project Management Committee. This charter is developed specifically for each major application system project. It sets forth the scope, objectives, activities, team organization, responsibilities, and the general methods of operation. The lines of authority and accountability are clearly identified.

Project Manager. Individual responsible for coordinating all functions of project management and held accountable for project performance.

Project Management Committee. Selected individuals having functional, financial, and technical expertise who oversee the status and progress of AS projects, and approve expenditures of funds. They also oversee planning and management of AS project resources, and provide reports to the Acquisition Review Team as required.

Project Team. Individuals assigned responsibilities for performing the activities and producing the products required during an application system development project. Major application systems will have two distinct Project Teams; one during the Initiation Phase, and a second team during the Development Phase.

SDP 1. System Decision Paper 1 contains an overview of the application plan. The application planning team prepares it at the end of the Initiation Phase to support a go/no go decision regarding starting the Development Phase.

SDP 2. System Decision Paper 2 contains an overview of the detailed design of the proposed application system. Hardware, software, and communications options are discussed and an approach is recommended. The ADP development team prepares this document at the end of the System Design Stage. It supports a decision on whether to construct the proposed system.

GLOSSARY

SDP 3. System Decision Paper 3 contains a summary of the constructed
application system and plans for implementing the system. The ADP
development team prepares this report at the end of the User Acceptance Stage
to support a go/no go decision regarding system implementation.

SDP 4. System Decision Paper 4 contains an overview of the effectiveness of
the application system that is in operation. It is prepared during the
Maintenance Stage by the functional manager with responsibility for the
mission area being served by the application system. The document supports a
decision regarding whether or not additional investment is needed to bring
the system into conformance with its planned goals.

Stage. A specific part of a phase in the life cycle of a major application
system. Each stage exists to provide specific deliverables in the life of
the system.

Steward. One who oversees the adequacy of an application system's support of
workplace functions. The steward's role includes management accountability
for the system's cost justification, the prioritizing of requests for its
alteration, and assisting the custodian in establishing a scheduled date to
implement a system change requested by the steward. Good management
practice dictates that the steward of a system never be its custodian, if the
system is a major application system. Professional ADP staff should perform
custodial functions for major systems.

System Analysis Stage. This stage of an application system's life cycle is
the first stage of the Development Phase. Detailed functional and data
requirements are described and documented. These requirements may be
identified by formal, structured analysis techniques, or by prototyping
techniques.

System Design Stage. The second stage of the Development Phase in the system
life cycle. System Design Stage includes the detailed design of software and
data bases to support the application.

System Architecture. The interrelationship between the components of an
application system.

System Life Cycle Strategy. Plan for managing an application system and
fulfilling system objectives under Federal, USDA, and agency regulations and
guidance. System Life Cycle Strategy contains method of acquisition,
development, test, and operation throughout the life of the application
system.

APPENDIX B

INTERNAL AND EXTERNAL REFERENCES

Source	Publication	Title/Subject
GSA	FAR	Subchapter G, sub-parts 42 and 43
NBS	Pub 500-144	Use of Proprietary Software Products
OMB	Circular A-76	Policies for Acquiring Commercial or Industrial Type Products and Services Needed by the Government
USDA	AGAR 439.70	Delegation of Acquisition Authority
USDA	ASAR 3040-1	Assistant Secretary for Administration File Plan and Disposition Schedule
USDA	DR 3100-1	Departmental Systems Review Board
USDA	DR 3111-1	Departmental Long-Range IRM Planning
USDA	DR 3130-1	Technical Approval for IRM Products and Services
USDA	DR 3130-2	Microcomputer Policy
USDA	DR 3140-1	USDA ADP Security Policy
USDA	DM 3140-1	USDA ADP Security Manual
USDA	DR 3200-1	Services at Departmental Computer Centers
USDA	DM 3200-2	A Project Manager's Guide to Application Systems Life Cycle Management
USDA	DR 3220-3	Software Management
USDA	DR 3300-1	Telecommunications
USDA	DR 5039-3	Agency Requests for Delegation of Procurement Authority for ADP Acquisitions

APPENDIX C

AUTOMATED PROJECT MANAGEMENT TOOLS

Computer Aided Software Engineering technology is an automated engineering discipline for project management, software development, and maintenance. It includes automated structured methodologies and automated tools. Contact OIRM, Agency Technical Services Division on 447-8705 for information regarding CASE products. The following list is representative of some available tools and is not a recommendation of any one product over another.

I.   Project Management Tools

    o   Microsofts Project
    o   Harvard Total Project
    o   Project Manager Workbench
    o   Qwiknet
    o   Super Project Plus
    o   Expert Choice
    o   Pmis
    o   Timeline

II.   Software Development Products

    o   Aims Plus
    o   Analyst/Designer Toolkit
    o   Application Factory
    o   CorVision
    o   Design Aid
    o   Design Machine
    o   Developer Workstation
    o   Excelerator
    o   Information Engineering Workbench
    o   Life Cycle Manager
    o   Life-cycle Productivity

III   Software Maintenance Products

    o   PATHVU
    o   Recoder

IV   System Development Methodologies

    o   Data Structured Systems Development (DSSD) Ken Orr and Associates
    o   Methodware (D. Appleton Co.)
    o   Method/1 (Arthur Anderson)
    o   PRIDE-ASDM (M. Bryce & Associates)
    o   Systems Developpment Methodology/70 (SDM/70) and Systems Development
        Methodology/Structural (SDM/Structural) (AGS Management)
    o   Spectrum/Productivity (Spectrum International)
    o   Structural Analyst, Design, and Implementation of Information
        Systems (STRADIS) (McDonnell Douglas Information Systems)
    o   System Development Standards (Cara Corp.)

APPENDIX D

APPLICATION SYSTEMS LIFE CYCLE MANAGEMENT DOCUMENTS

INITIATION PHASE		DEVELOPMENT PHASE				OPERATION PHASE	
Mission Analysis Stage	Concept Development Stage	System Analysis Stage	System Design Stage	System Construction and Acquisition	User Acceptance Stage	Implementation Stage	Maintenance Stage
LIFE CYCLE MANAGEMENT DOCUMENTS							
PROJECT REQUEST MISSION ANALYSIS METHOD COST/BENEFIT PROJECT CHARTER ORGANIZATION MODEL PROCESS MODEL INFORMATION MODEL MISSION NEED STATEMENT	SYSTEM OBJECTIVES SYSTEM ARCHITECTURE DATA ARCHITECTURE DATACOMM ARCHITECTURE SYSTEM LIFE CYCLE STRATEGY MILESTONE DATES SLC RESOURCE ESTIMATES COST/BENEFIT SYSTEM DECISION PAPER 1	CURRENT SYSTEM DESCRIPTION DETAILED FUNCTIONAL REQUIREMENTS DATA REQUIREMENTS	SYSTEM DESIGN PROPOSAL DETAILED COST/ BENEFIT REVISIONS REVISED SLC STRATEGY SYSTEM DECISION PAPER 2	ADPE SPECS APPLICATION SOFTWARE DOCUMENTATION SYSTEM TEST PLAN CONTROL. BACKUP, & SECURITY SUMMARY	SYSTEM * ACCEPTANCE REPORT IMPLEMENTATION PLAN CONVERSION PLAN USER TRAINING PLAN PIR PLAN DATA PROCESING MANUAL USER MANUAL OPERATIONS MANUAL SYSTEM DECISION PAPER 3	APPLICATION STEWARDSHIP DOCUMENT	POST IMPLEMENTATION REVIEW REPORT SYSTEM DECISION PAPER 4

* SYSTEM ACCEPTANCE REFERS TO FUNCTIONALITY AND DATA ACCEPTABILITY, NOT SYSTEM STEWARDSHIP.